Leibniz Institute for
EAST AND SOUTHEAST
EUROPEAN STUDIES

Arbeitsbereich Ökonomie

IOS Working Papers

No. 376 October 2018

Extra Votes to Signal Loyalty: Regional Political Cycles and National Elections in Russia

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This research was supported by a grant from the CERGE-EI Foundation under a program of the Global Development Network. All opinions expressed are those of the authors and have not been endorsed by CERGE-EI or the GDN. All errors remaining in this text are the responsibility of the authors.

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ISSN: 2199-9465

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Abstract

Under the system of appointing regional governors by the president, which existed in Russia between 2005–2012, governors' loyalty to the central government and particularly their ability to deliver satisfactory results to the ruling party in national-level elections were crucial to their likelihood of being re-appointed for the next term. In this paper, we show that governors, anticipating the relationship between loyalty and re-appointments, attempted to increase their likelihood of being re-appointed by delivering additional votes to the ruling party, and that these attempts were subject to regional political cycles. We argue that delivering satisfactory results may have different importance to a governor depending on the stage of his term at which elections are held. If elections are held close to the expiration of a governor's current term, the results are likely to be pivotal to his further political career. Exploiting variation in the starting and expiry dates of Russian regional governors' terms of office, we find that the winning margins for a pro-government party across Russian regions in national-level elections held between 2007–2012 were substantially higher when elections were closer to the expiration of a regional governor's term. However, for elections held between 1999–2004, when governors were subject to a direct vote by the regional population, no similar effect is found. We then implement several exercises to identify the source of the additional votes for the ruling party and demonstrate that governors, while unlikely using the means of electoral fraud, exerted efforts to stimulate turnout among ruling party supporters.

JEL-Classification: D72, D73, P26

Keywords: political cycle, elections, electoral fraud, Russia

1. Introduction

There is much evidence showing that politicians change their behavior during terms of office in systematic ways. This is particularly true for elected politicians: prior to elections, incumbents may inflate public expenditures (Akhmedov & Zhuravskaya, 2004; Ehrhart, 2011; Guo, 2009), shift the composition of expenditures towards more publicly visible projects (Aidt, Veiga, & Veiga, 2011; Drazen & Eslava, 2010; Schneider, 2010), stimulate job creation (Labonne, 2016; Mechtel & Potrafke, 2013; Tepe & Vanhuysse, 2009), increase overt anti-corruption activities when voters care greatly about corruption (Khemani, 2004; Vadlamannati, 2015), tolerate violations of the law when the electorate is poor (Holland, 2015), engage in dubious activities to raise funds for their campaigns (Mironov & Zhuravskaya, 2016), and release overly optimistic economic forecasts (Boylan, 2008), etc.[1]

However, the literature on the behavior of appointed politicians remains scarce. Several recent studies show that the behavior of appointed politicians is also often driven by political cycles, although in a different manner than in the case of elected politicians. While being generally less likely to engage in opportunistic behavior (Enikolopov, 2014; Hessami, 2017), appointed politicians still respond to incentives generated by political cycles, for example, engaging in corruption more intensively when expecting not to be re-appointed (Sidorkin & Vorobyev, 2018). In this paper, we contribute to the literature on the behavior of appointed politicians in two ways. First, we demonstrate that appointed regional governors in Russia influence the results of national-level elections in their regions in order to signal their loyalty to the central government and thus to increase their chances of being re-appointed. Second, we show that such signaling is subject to regional political cycles; that is, the magnitude of the signaling systematically changes over governors' terms of office.

It has been well established that in Russia since the beginning of 2000s, the loyalty of regional governors to the central government and, more specifically, their ability to mobilize

[1] For a comprehensive review of the literature on politicians' behavior driven by political cycles see, e.g. De Haan and Klomp (2013).

votes for the ruling party[2] in national-level elections was highly valued and rewarded both financially and politically. For example, Rochlitz (2014) establishes a strong positive relationship between the electoral results of the ruling party in a region and the scale of the involvement of government officials in illegal corporate raiding in this region, arguing that regional officials are allowed to participate in illegal financially rewarding activities in exchange for the ability to deliver satisfactory electoral results. Reuter and Robertson (2012) find that under the system of appointing regional governors by the president, which existed in Russia from 2005 until 2012, electoral outcomes in national-level elections have a strong impact on appointment decisions, while regional economic development and the quality of governance play, at most, a limited role in appointments. This finding is confirmed by, for example, Reisinger and Moraski (2013), Gelman (2008), Gelman (2010), and Rochlitz (2016).

Given that the satisfactory results of the ruling party in national-level elections are rewarded, governors who expect to face a re-appointment decision should exert efforts to deliver positive results if they seek re-appointment. However, delivering satisfactory results in particular national-level elections may have a different value to a governor, depending on the stage of his term at which the elections are held. Suppose the president assesses a governor and decides whether to re-appoint him based on how the governor handles the tasks he faces over his term with time discounting, i.e. putting higher weights on the outcomes of more recent tasks. As discussed above, delivering good results for the ruling party in national-level elections seems to be one of such tasks in Russia. Then, other things being equal, the closer elections are held to the moment of the re-appointment decision, the higher their effect on the governor's assessment by the president. Therefore, if elections are held close to the expiration of a governor's current term, their outcomes are more important to the governor's further career than when elections are held, for example, in the middle of the term. In the latter case, elections might not be as important since the governor still has time to prove his loyalty to the president and competence through other channels.

[2] Through this paper, when using the term "ruling party" we refer to the United Russia (*Edinaya Rossiya*) party in the case of parliamentary elections, and to the incumbent president or a candidate supported by him in the case of presidential elections, i.e. Vladmir Putin in 2000, 2004 and 2012, and Dmitriy Medvedev in 2008.

If the importance of particular national-level elections has a different value to a governor at different stages of his term, there should be a systematic pattern in the governor's pre-election activity and, as a result, in voting outcomes, which can be explained by regional political cycles. In this paper, we test for the presence of such a pattern. Specifically, exploiting variation in the starting dates and length of Russian regional governors' terms in office, we first test the hypothesis that for the 2005–2012 period (more specifically in 2007, 2008, 2011, 2012 when national-level elections were held), i.e. the years when the appointment system existed, the winning margins of the pro-government party or candidate in national-level elections in Russian regions are higher when elections are held closer to the expiration of a regional governor's term. Our analysis provides strong evidence of loyalty signaling through votes: the ruling party obtains up to 10 additional percentage points in its victory margin in elections held 6 months before the expiration of a governor's term than in elections held at the beginning or in the middle of the term.

However, we do not find any similar pattern for the national-level elections held between 1999–2004, i.e. the period when governors were subject to a direct vote by the regional population. Since it is unlikely that voters value ruling party electoral results in a way similar to the president, governors, who are subject to a direct election, should not have similar incentives to deliver votes to the ruling party as those governors who are subject to appointment decisions. One may argue that the elections of regional governors could be controlled by the central authorities to the extent that would make elections not much different from appointments. However, regional elections in Russia between 1999–2004 were relatively competitive and were certainly not controlled to a great extent.[3]

Indeed, governors could seek support from the president and ruling party in regional-level elections in an attempt to "please" them with votes in national-level elections. In such a case, they would have incentives to signal their loyalty via extra votes similar to the incentives of governors who are subject to appointment, and we could observe a pattern in victory margins similar to that established for the 2007–2012 elections, though of a smaller magnitude. However, we do not find any evidence of this.

[3] For example, Golosov (2011) and McFaul and Stoner-Weiss (2008) suggest that the 1999 elections were among the freest and the most competitive in contemporary Russia. Since that time, the fairness and competition of elections have been gradually deteriorating. For instance, after the 2011 and the 2012 elections, after not being allowed to monitor the 2007 and the 2008 elections, the OSCE mission reported deteriorating conditions for fair electoral competition. Individual reports can be accessed at: https://www.osce.org/odihr/elections/russia.

We then attempt to understand the nature of the increase in victory margins in national-level elections between 2007–2012, and identify the sources of the extra votes for the ruling party. Potentially, there could be many ways for governors to deliver these extra votes. First, governors may affect election results indirectly, boosting support for the ruling party in their regions by, for example, exerting effort to perform in publicly valued sectors or increasing voters' income (via transfers, wage increase, lowering taxes, etc). Second, governors may affect election results directly, without increasing actual support for the ruling party, by either committing electoral fraud or by changing the electorate composition in favor of the ruling party, i.e. by stimulating turnout among ruling party supporters and/or by discouraging turnout among opposition supporters. In this paper, we focus on direct mechanisms only, because: 1) they are more likely to be used by the governors due to lower costs and higher efficiency relative to indirect mechanisms; 2) there is a substantial number of possible indirect mechanisms, and studying all of them consistently and comprehensively is unlikely to be feasible; 3) we show that the ruling party's popularity does not systematically vary over governors' terms, and thus we do not have a good reason to believe that indirect methods are extensively used.

Exploring which direct mechanisms governors may use to deliver additional votes to the ruling party, we test two hypotheses. Our first hypothesis is that the driving force for the observed pattern in victory margins is the higher participation of ruling party supporters arising from mobilization efforts taken by governors. There is much evidence that in-office politicians mobilize votes in Russia. For example, Frye, Reuter, and Szakonyi (2018) and Frye, Reuter, and Szakonyi (2014) show that extensive voter mobilization was an integral part of the 2011 parliamentary elections and the 2012 presidential elections, and it occurred primarily at workplaces in the public sector as well as in state-owned and affiliated companies. The extent of mobilization efforts was particularly large in companies which have more leverage over employees, e.g. in large companies located in towns dominated by a single company or industry. In addition, instances of mobilization efforts occurred in, e.g., primary schools where teachers put pressure on parents, in universities where administrations exerted an influence on students and faculty members, and even in hospitals where doctors pressured patients.

If governors, when approaching their term expiry date, use additional resources to stimulate turnout among potential ruling party supporters (e.g. among government, state-owned companies' or government-affiliated companies' employees), we should observe an increase in both overall turnout and in mobilization efforts similar to the increase in victory margin. We find some supporting evidence for this hypothesis, but argue that turnout stimulating activities observed in regions where governors are about to finish their terms cannot fully explain the additional ruling party votes, and thus there must be other reasons for the pattern we discovered.

Since it is well established that from the beginning of the 2000s, electoral fraud had been a widespread phenomenon in Russia (Enikolopov, Korovkin, Petrova, Sonin, & Zakharov, 2013; Lukinova, Myagkov, & Ordeshook, 2011; Moser & White, 2017; Myagkov, Ordeshook, & Shakin, 2009; Skovoroda & Lankina, 2017; Treisman, 2009), we further conjecture that the increase in ruling party victory margins may come not only from the mobilization of voters, but also from electoral manipulations implemented at the regional level. We use several distinct regional-level measures of fraud designed to capture various fraud techniques, and test the hypothesis that the intensity of electoral manipulations increases closer to a governor' term expiry date.

2. Background

In 1993, when the current Constitution of Russia was adopted, there were 89 constituent entities ("federal subjects") in the country. Between 2003 and 2007, several mergers took place, and since then there have been 83 federal subjects in Russia.[4] For simplicity, we refer to them as "regions". Since 1996, following the decision of the Constitutional Court of Russia, governors ("gubernators") of all the regions had to be directly elected by the population. At the end of 2004, the President of Russia, Vladimir Putin, introduced a reform that abolished direct elections: from that time regional governors were appointed by the president. Though formally the new procedure assumed that the president would simply nominate a candidate for governor while the regional parliament could approve or reject the candidate, there was no single case in which the parliament of a region did not approve a presidential nominee. The reform was approved by the Parliament of Russia in December 2004, and the last direct elections took place in February 2005. Because the reform assumed the replacement of elected governors after the expiration of their terms, and the date of expiration varied significantly across the regions, the full replacement of elected governors took about 5 years. The first appointed governor took office in February 2005, while the term of the last elected governor expired in December 2009, and from that time all the governors were appointed until October 2012 when direct elections were re-established. The variation in the dates of governors' appointments across the regions can be mainly explained by differences in local legislation that allowed for different term lengths (usually 4 or 5 years) as well as a high degree of freedom for regions in setting the dates of gubernatorial elections in the past. Because of this, we believe that the variation in the dates of governors' appointments and thus in the dates of the expiration of their term across regions can be considered exogenous.

In this paper, we study four national-level elections held during the existence of the appointment system (parliamentary on December 2, 2007 and December 4, 2011, and presidential on March 2, 2008 and March 4, 2012), and four national-level elections held before the introduction of governors' appointments (parliamentary on December 19, 1999 and December 7, 2003, and presidential on March 26, 2000 and March 14, 2004). Throughout the paper, we refer to the corresponding periods as "2007–2012" or "appointment" period, and "1999–2004" or "election" period, respectively.

[4] This number includes 46 "oblasts", 21 "republics", 9 "krays", 4 "autonomous okrugs", 2 "cities of federal significance", and 1 "autonomous oblast".

There could be some concerns regarding the inclusion of the 1999 parliamentary elections in our analysis, since they were somewhat different from the other elections we study. First, in contrast to the other elections in our sample, which were held during the presidency of Vladimir Putin, the 1999 elections were held during Boris Yeltsin's presidency. Second, it is not quite clear what "ruling party" means for the 1999 elections, since there were two competing pro-government parties, "Unity" ("Yedinstvo") and "Fatherland – All Russia" ("Otechestvo – Vsya Rossiya"). Nevertheless, both parties were considered prospective "ruling parties" and enjoyed the support of different regional governors (Golosov, 2011), later merging into a single party "United Russia" ("Yedinaya Rossiya"). In the end, we decided to include these elections in our analysis because we believe that these differences do not make the story of loyalty signaling via national-level election results irrelevant, and because the presence of the 1999 elections allows us to have the same number of elections in "election" and "appointment" periods, making our analysis more balanced.[5]

Further, we restrict our attention to the analysis of elections held before 2012 only, and do not consider the 2016 parliamentary elections and the 2018 presidential elections for several reasons. First, in 2012 the appointing system was abolished and direct gubernatorial elections were restored.[6] It would be worth considering the latest election period, which started in 2012, but because only two national-level elections have been held so far, the data are limited. Second, even when there are enough new elections to extend our analysis (e.g. in 2024), we will unlikely be able to do so in a similar way we do now, because since 2012 we have been gradually loosing cross-regional variation in the timing of regional elections with the respect to national elections. With effect from 2012, all regional-level elections are held on the same date, and it has become a general practice to allow governors to stay several months longer in their offices or to appoint acting governors upon completion of regular terms in order to have elections in several regions on a single day.[7] As a result, the variation across regions in

[5] In fact, our results are robust to the exclusion of the 1999 elections, and are available upon request.

[6] Except in 6 southern ethnic republics (Chechnya, Dagestan, Ingushetia, Kabardino-Balkaria, Karachay-Cherkessia and North Ossetia-Alania) and 3 northern "autonomous okrugs" (Khanty Mansiysk, Yamalo-Nenets and Nenets), where governors are elected by regional parliaments.

[7] There were 5 regional elections in the "unified election day" in 2012, 8 in 2013, 30 in 2014, 24 in 2015, 9 in 2016, and 17 in 2017.

the moment of time at which a governor faces national-level elections, which is essential for our analysis, vanishes, and soon there will be just 5 groups of governors facing national-level elections in the their first, second, third, fourth, or fifth year of term, but at exactly the same moment within each group.

In our analysis, we do not consider three ethnic southern regions, Chechnya, Dagestan and Ingushetia. First, these regions have very different patterns in voting behavior since almost all of their inhabitants are muslims (96%, 94%, and 98%, respectively).[8] Second, they are infamous for extensive electoral manipulations and not fully reliable official electoral data.[9] Third, for these regions, some socioeconomic data we use in the analysis, particularly from the 1999–2004 period, are either missing or not completely reliable and comparable to the data from other regions due to military conflicts that took place in this part of Russia at that time. For these reasons, the regions are hardly comparable to the other Russian regions, although all the results presented in this paper are robust to the inclusion of these regions in the dataset.[10] Thus, we study 80 regions over 4 elections during the election period (1999–2004) and over 4 elections during the appointment period (2007–2012).

[8] Kabardino-Balkaria, the 4th region by the share of the muslim population, has 70%, and the 5th region, Karachay-Cherkessia, has 54.6%.

[9] In these regions, the average officially-reported turnout across the elections we analyze is 94.5%, 87.9%, and 85.9%, respectively, and the average ruling party share is 96.8%, 83.0%, and 87.9%, respectively. In contrast, the corresponding numbers for the rest of the country are 64.1% and 55.3%.

[10] The estimation results are available upon request.

3. Main Analysis

3.1 Data and Estimation Strategy

We first want to test whether shorter time until the expiration of terms, and hence until the re-appointment decision, makes governors more likely to signal their loyalty through delivering better election results to the ruling party in national-level elections. We conduct the test for the election period (1999–2004) and for the appointment period (2007–2012) separately. Specifically, for each period we estimate the following panel data model using the following fixed effects estimator:

$$VoteShare_{it} = \alpha_i + \alpha_t + \beta_1 Time_{it} + \beta_z Controls_{it} + u_{it}, \quad (1)$$

where $VoteShare_{it}$ is the ruling party vote share in region i in elections in year t, $t \in \{2007,2008,2011,2012\}$ for the appointment period, and $t \in \{1999,2000,2003,2004\}$ for the election period. $Time_{it}$ is the number of months in office the governor of region i is left with at the moment of national-level elections in year t. For instance, if in March 2012, when the 2012 presidential elections were held, the governor of region i has 1 year and 3 months more in office, i.e. the expected end of his term is in June 2013, $Time_{i,2012} = 15$. $Controls_{it}$ are various control variables for region, governor, and election characteristics; α_i is a time-invariant regional fixed effect, α_t is the election year dummy, and u_{it} is the error term.

To estimate model (1), we use the regional-level electoral results of the national-level elections held between 1999 and 2012, which come from the Central Election Commission of Russia (www.cikrf.ru). Additionally, we use regional-level data on the economic and demographic characteristics of the Russian regions in election years, which come from the Russian Federal State Statistics Service (www.gks.ru). These data include per capita gross regional product, unemployment rate, inflation rate, urbanization rate, as well as the numbers of retired people and people living below the poverty line per 1,000 of the population.[11] We also use data on regional governors' characteristics, including age, length of in-office tenure, and background collected from open sources, such as governors' web pages, Wikipedia, and online media. The full list and description of the control variables used in model (1) is presented in Table 7 of the Appendix.

[11] Since presidential elections are held in March and parliamentary elections areheld in December, we use previous year values of regional variables for presidential elections and current year values for parliamentary elections.

In order to more accurately test the hypothesis that governors try to signal their loyalty to the central government in an attempt to increase their likelihood of being re-appointed more accurately, we exclude several observations from our panel. First, we drop 9 observations from the appointment period (2007–2012) in which governors actually finished their terms within a month after national-level elections. We believe that in these cases, the re-appointment decisions were likely made before the elections, and thus governors were not able to influence them via signalling and they likely had no incentives to do so.[12] Second, we drop 11 observations from the election period in which governor elections were hold simultaneously with national-level elections.[13] Our concern is that in these cases governors were running their own campaigns and thus could affect ruling party support in their regions without an intention to signal their loyalty. Finally, we drop 2 cases in which governor offices were vacant at the moment of national elections.[14]

When estimating model (1), we test different alternative functional forms for $Time$ to account for the potential non-linear relationship between $Time$ and the dependent variable $VoteShare$. For this purpose, we first include polynomials of $Time$ up to the third degree. Second, we add $Turnout$ to the set of our controls, expecting that there could be a significant correlation between turnout and ruling party vote share. However, there could be uncontrolled factors, such as preferences of the electorate[15] and electoral fraud[16], that are correlated with both turnout and the ruling party vote share, resulting in biased coefficients when estimating equation (1). To address this problem, we instrument $Turnout$ with the average temperature on the day of elections and its square, assuming that the weather is likely to be a significant predictor of turnout but not of the vote share directly. Finally, to verify the robustness of the

[12] For an example when it was publicly announced that a governor will be re-appointed a week prior to the expiration of his term: fwww.kremlin.ru/catalog/persons/214/events/6172www.kremlin.ru/catalog/persons/214/events/6172 (in Russian).

[13] In these cases, regional governors stayed in office up to several months less or more than determined by their term limits in order to held regional and national elections simultaneously, saving on organizational costs and encouraging voter turnout.

[14] There were acting governors in the Bashkortostan region in December 2003 and in the Perm region in March 2004.

[15] If, for example, ruling party supporters are more likely to participate than opposition supporters, there will be a natural positive correlation between turnout and ruling party vote share across regions.

[16] Fraud techniques, such as ballot stuffing and multiple voting, lead to an increase in both voter turnout and the beneficiary party vote share in the regions in which they occur.

timing effect further, we split governors' terms into 10 equally-spaced time periods for every 6 months and directly control for them with dummy variables. A dummy $TimeX_{it}$ ($X \in [0,9]$) equals 1, if at the moment of national-level elections in year t the number of months the governor of region i was left in office with is between $6X$ and $6(X+1)$. That is, for elections held in March 2012 in a region where the governor's term expires in June 2013, the dummy for period 2, $Time2_{i,2012}$, is 1, while the dummies for all the other periods are 0.

$Time_{it}$ (time dummies in the alternative specification) is our main variable of interest. As discussed in the previous section, variation in this variable comes from the fact that the expiration dates of governors' terms across Russian regions vary greatly due to historical reasons as well as differences in regional electoral legislation. Given the nature of the variation, it could be considered exogenous to the dependent variables used throughout the analysis, which makes identification of the effects of interest possible.

It is important to point out that we pool data from both presidential and parliamentary elections in our analysis. A potential concern here is that the observations from the two types of elections may not be directly comparable due to systematic differences in the nature of the data. In fact, the data are systematically different: both turnout and ruling party votes share are substantially higher in presidential elections. However, there is a systematic difference in means only, while the variances of both turnout and ruling party vote share do not substantially differ. Since in model (1), as well as in all the models below, we allow for election fixed effects (α_t), the difference in means does not cause a problem. Figure 6 and Figure 7 of the Appendix present histograms of the main variables of interest (turnout and ruling party vote shares are demeaned to highlight the similarities in their distributions across different types of elections).

3.2 Results

Table 1 contains the results of estimating several specifications of model (1) with $VoteShare$ as the dependent variable for the 2007–2012 period, and Table 2 contains the results for the 1999–2004 period. All the specifications are estimated by the fixed effects estimator and include regional economic variables, governors' individual controls, and year effects. In the first specification, we estimate model (1) using the continuous measure (months) of the

proximity of national-level elections, $Time$. To account for the non-linearity of the relationship between $Time$ and $VoteShare$, we allow for the polynomial form of the variable of interest. We find that the polynomial terms of $Time$ up to the second (column 1) or third (column 2) degree give the most plausible results. Finally, we include turnout as an additional control and then, suspecting omitted variable bias, instrument it with the election day weather (column 3).

Table 1: Baseline model (2007–2012). Dependent variable: Ruling party share

	(1)		(2)		(3)	
Time	–0.326**	(0.147)	–1.108***	(0.362)	–0.934**	(0.470)
Time^2	0.006***	(0.002)	0.037***	(0.013)	0.034***	(0.013)
Time^3			–0.000**	(0.000)	–0.000***	(0.000)
Turnout					0.733	(1.374)
Unemployment	–0.787***	(0.288)	–0.740	(0.278)	–0.621*	(0.339)
Real GRP	0.061***	(0.023)	0.067*	(0.024)	0.044	(0.035)
Natural resources (%)	0.109	(0.121)	0.157	(0.109)	0.205	(0.151)
Urbanization	0.745**	(0.354)	0.845**	(0.384)	1.182	(0.851)
Inflation	–0.244	(0.372)	–0.106	(0.373)	0.139	(0.608)
Retired	–1.689	(1.144)	–2.118*	(1.207)	–0.952	(2.274)
Poverty	–0.080	(0.182)	–0.113	(0.184)	–0.115	(0.175)
Elected	–0.899	(1.647)	–1.746	(1.630)	–2.718	(2.588)
External	–3.416**	(1.397)	–2.959**	(1.429)	–3.259**	(1.652)
First term	–0.324	(1.896)	–0.603	(1.826)	–0.909	(1.894)
Experience	–0.145	(0.228)	–0.183	(0.225)	–0.311	(0.332)
Governor's age	–0.495	(0.610)	–0.396	(0.585)	–0.603	(0.751)
Governor's age^2	0.004	(0.006)	0.004	(0.005)	0.006	(0.007)
Year=2008	4.891***	(0.753)	5.035***	(0.744)	1.176	(7.631)
Year=2011	–16.734***	(3.858)	–16.532***	(3.724)	–13.750**	(6.352)
Year=2012	–1.800	(3.855)	–1.411	(3.736)	–2.323	(3.983)
R^2 (within)	0.76		0.77		0.81	
R^2 (between)	0.01		0.01		0.00	
R^2 (overall)	0.01		0.01		0.05	
F	40.33		40.77			
Wald χ^2					43438.94	
Observations	311		311		311	
Regions	80		80		80	

Note: The table reports fixed effects (FE) estimates for quadratic (column 1) and cubic specifications (column 2) of model (1) as well as the for specification with endogenous variable $Turnout$ instrumented with the average temperature in a region on election day and its square (column 3). Standard errors clustered on Regions are in parentheses.

$^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table 2: Baseline model (1999–2004). Dependent variable: Ruling party share

	(1)		(2)		(3)	
Time	–0.003	(0.184)	–0.836	(0.505)	–0.270	(0.477)
Time^2	0.001	(0.003)	0.031*	(0.017)	0.013	(0.016)
Time^3			–0.000*	(0.000)	–0.000	(0.000)
Turnout					1.130**	(0.442)
Unemployment	0.036	(0.252)	0.022	(0.245)	0.088	(0.172)
Real GRP	0.015	(0.012)	0.017	(0.011)	0.016*	(0.009)
Natural resources	0.042	(0.139)	0.041	(0.143)	–0.230	(0.153)
Urbanization	–1.592*	(0.903)	–1.722**	(0.865)	0.131	(0.894)
Inflation	–0.017	(0.137)	–0.011	(0.138)	0.179	(0.143)
Retired	–0.474	(0.593)	–0.526	(0.592)	0.071	(0.473)
Poverty	–0.137	(0.107)	–0.127	(0.104)	–0.058	(0.075)
External	1.532	(3.106)	0.580	(2.599)	1.948	(2.530)
First term	0.734	(1.806)	0.725	(1.784)	–1.326	(1.619)
Experience	0.045	(0.438)	0.090	(0.404)	–0.282	(0.348)
Governor's age	–0.864	(0.827)	–0.928	(0.831)	0.379	(1.010)
Governor's age^2	0.009	(0.008)	0.009	(0.008)	–0.002	(0.010)
Year=2000	16.979***	(1.081)	16.711***	(1.091)	9.056***	(3.428)
Year=2003	0.388	(4.027)	0.514	(3.980)	14.083**	(6.315)
Year=2004	32.792***	(3.981)	32.816***	(3.905)	35.806***	(3.281)
R^2 (within)	0.89		0.89		0.87	
R^2 (between)	0.03		0.03		0.37	
R^2 (overall)	0.31		0.29		0.75	
F	231.82		248.01			
Wald χ^2					30672.75	
Observations	307		307		307	
Regions	80		80		80	

Note: The table reports fixed effects (FE) estimates for quadratic (column 1) and cubic specifications (column 2) of model (1) as well as for the specification with endogenous variable $Turnout$ instrumented with the average temperature in a region on election day and its square (column 3). Standard errors clustered on Regions are in parentheses.

$^*p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Overall, our results suggest that the stage of a governor's term at which he faces national-level elections and the electoral results of the ruling party are strongly related for the 2007–2012 elections, but not for the 1999–2004 elections: the effect of $Time$ and its higher degrees are strongly significant in the first case, while they are almost nowhere significant at conventional levels in the second. Based on our estimates, we construct linear predictions of $VoteShare$ as a function of $Time$ estimated at the means of all confounding variables to illustrate the dynamics of the national-level election results over governors' terms. The predictions are depicted in Figure 1 and Figure 2, charts (a) and (c). For the 2007–2012 period for all the specifications, we see a clear increase in ruling party vote share towards lower values of $Time$, which corresponds to a smaller amount of time a governor is left with in office at the moment of national-level elections. However, for the 1999–2004 period, the increase is insignificant, if any, and of a lower magnitude.

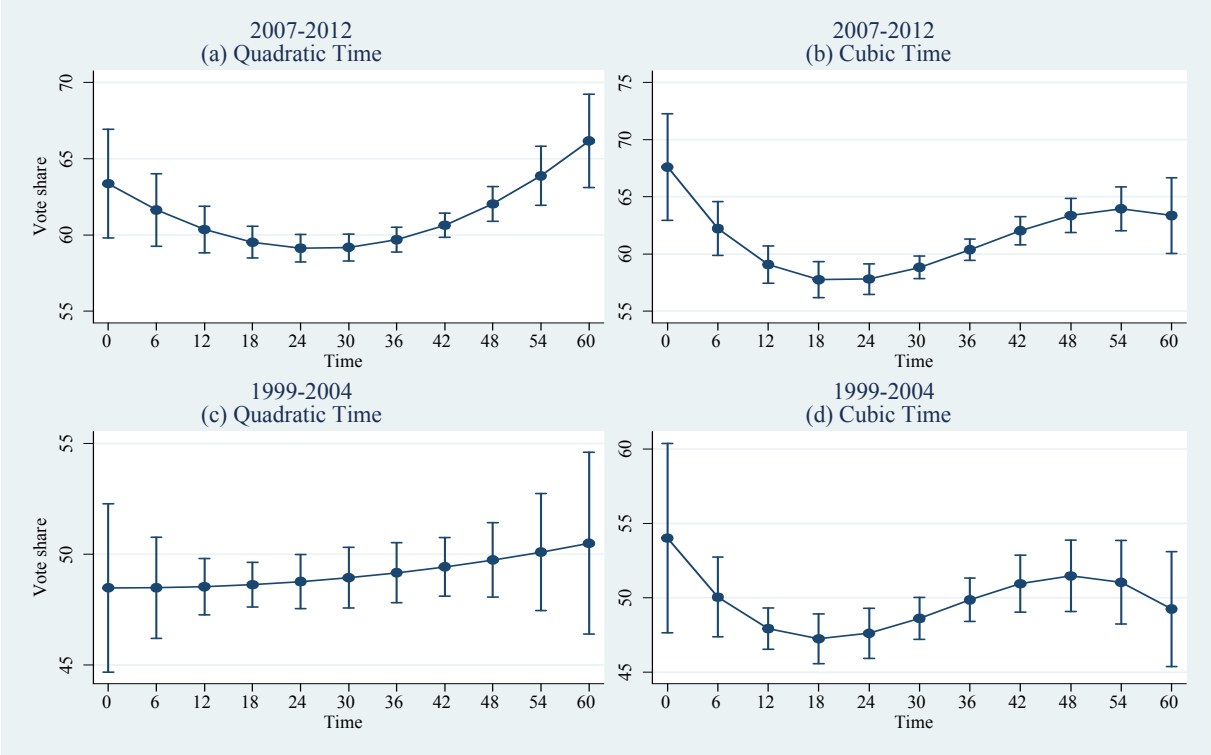

Figure 1: Effect of $Time$ on ruling party vote share

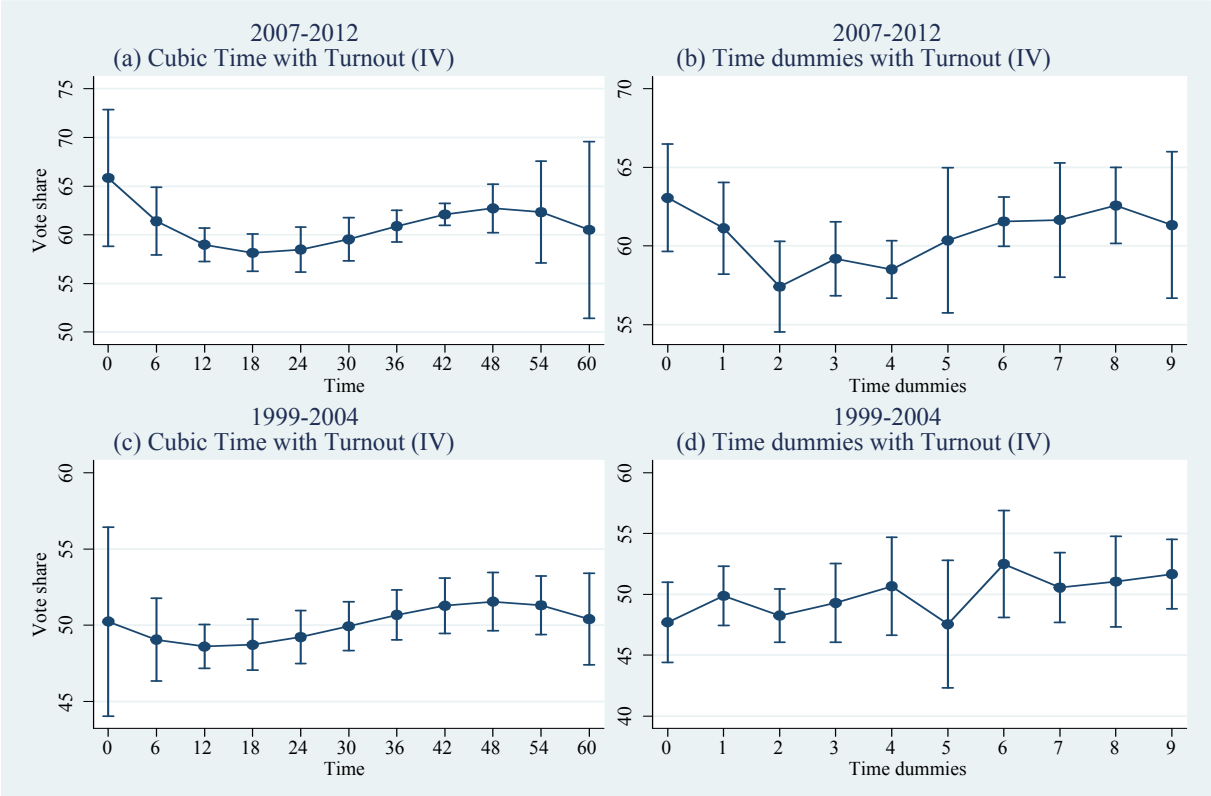

Figure 2: Effect of $Time$ on ruling party vote share

One may also note a somewhat U-shaped relationship between $Time$ and $VoteShare$ for the 2007–2012 period, particularly for the quadratic specification (Figure 1, chart (a)). This relationship might be driven by the particular assumption on quadratic relationship between the variables. When we use more flexible specifications (third degree polynomial and the specification with instrumented turnout), the right tail of the graph, which corresponds to the period of 48–60 months before the end of governors' terms, flattens, while the increase in $VoteShare$ closer to the term end, becomes clearer and large in magnitude.

We then use 10 time dummies (periods) instead of $Time$ to measure the proximity of the national-level election to a governor's expected end of term. The marginal effects from the estimations are illustrated in Figure 2, charts (b) and (d). Similar to the case of the continuous variable $Time$, the 1999–2004 graph is effectively flat, while the 2007–2012 graph shows a clear increase in ruling party vote share for the time periods close to term expiration. Again, in Figure 2 one can see a somewhat weak U-shaped relationship between the timing of elections with respect to governors' term stage and ruling party vote share for the 2007–2012 period. One reason for such a result could be the increased willingness of recently appointed or recently re-appointed governors to also signal their loyalty to the ruling party by delivering extra votes, thanking the government for the decision to appoint them or re-assuring it that the decision was correct. Some of our further results will provide additional, although rather weak, evidence that governors do something to deliver extra votes not only when they approach the end of their term, but also when they just start it. However, since the increase in vote share is much clearer at the end of the term than at the beginning, throughout this paper we primarily focus on the former.

Overall, both approaches, dummies, and continuous measure give similar results: a clear increase in vote share of the ruling party in national-level elections when a governor approaches the end of his term for the 2007–2012 period and a much less clear trend, if any, for the 1999 – 2004 period. Specifically, during the 2007–2012 period, if national-level elections are held within 1 year around the end of a governor's term ($Time \in [0,12]$, period dummies are 0–1), the ruling party's share increases by about 7–10 percentage points compared to the middle of the term ($Time \in [24,36]$, periods 4–5). However, no similar effect is found for the 1999–2004 period.

In addition to $Time$, the variable of interest, there are several other variables which have a significant effect on the electoral results of the ruling party in national-level elections. For a number

of specifications we estimate, our results (see Table 1 and 2) suggest that, e.g., in 2007–2012 the ruling party receives more votes in more economically developed and prosperous regions with a higher share of urban population, regions with lower unemployment and in regions where governors are local as opposed to coming from another region[17]. The coefficient on the year dummies shows that the results of the incumbent in presidential elections are higher than the results of the ruling party in parliamentary elections, while they both substantially lost support in 2011–2012 compared to 2007–2008. However, over the first half of the 2000s, the electoral results of the ruling party were constantly increasing.

[17] We treat a governor as local (vs. external) if he has significant experience or personal ties associated with the region, such as experience in local government, business or other organizations. The governor may originally come from another region, but may have several years of professional experience in this region prior to taking office.

4. Potential Explanations

We have established that, in the regions where governors approach their term expiry date, the ruling party receives more votes in national-level elections. We then attempt to identify the sources of these additional votes. We first check whether the increase in the number of votes can be simply explained by the increase in support for the government in general.

As we discussed above, governors may boost the support for ruling party in their regions by, e.g., exerting effort to perform in publicly-valued sectors or by affecting voters' income. If governors do something that actually makes voters support the ruling party's more and thus vote for it more, one should observe an increase in ruling party actual popularity, similar to the increase in vote shares we established. To test this hypothesis, we collect data on presidential approval ratings from two publicly available surveys conducted by Russian Public Opinion Research Center (VCIOM, https://www.wciom.com/) and then by Levada Center (www.levada.ru), the largest Russian non-governmental polling and sociological research organizations:

- Courier Survey covers the period of 2003–2014.[18] During the period we consider in our analysis (2003–2012), between 13 and 24 surveys were conducted every year.
- Monitoring Survey (the monitoring of socio-economic changes) covers the period of 1993–2012. During the period we consider, between 3 and 6 surveys were conducted every year.

Both surveys ask respondents whether they approve of the actions of the president or not.[19] Based on the surveys, we construct two regional measures of ruling party support, taking the most recent survey for each election and averaging the respondents' answers at the regional level.[20] We use these two approval measures to estimate the following model using fixed effects for the 2007–2012 period:

$$Approval_{it} = \alpha_i + \alpha_t + \beta_1 Time_{it} + \beta_z Controls_{it} + u_{it}, \quad (2)$$

[18] In fact, the Courier Survey had been conducted since 1992, but the data before 2003 do not contain information about respondents' regions, which is essential for our analysis.

[19] In some years, the surveys use not binary but Likert scale questions, offering respondents the possibility to assess whether they approve of the president's policy and action on a scale from 0 to 4 or from 1 to 10. We transform all the answers in such cases into "yes" or "no" to have homogenous data.

[20] Though presidential approval and approval of the United Russia party are not indeed the same things, we still believe that they are highly correlated, and thus ameasure based on the presidential approval can be safely used for the purposes of our analysis.

where $Time_{it}$ is again a vector of polynomials of $Time$ up to the third degree, and $Controls_{it}$ is a vector of regional characteristics identical to that used above for the estimation of model (1). The results of the estimation are presented in Table 3 and illustrated in Figure 3. For both measure, the coefficients on all the degrees of $Time$ are insignificant, indicating no evidence that ruling party support prior to national-level elections in regions is affected in any way by the stage of the term at which regional governors face the elections. Moreover, Figure 3 rather suggests that the president's approval is more likely to decrease somewhat towards the end of a regional governor's term. This finding suggests it is unlikely that governors do something that would positively affect actual ruling party support when attempting to signal their loyalty to the central government. This leaves us with a conjecture that governors affect electoral results in some direct way, without affecting true ruling party support.

Table 3: The effect of Time on ruling party support. Dependent variable: Ruling party support

	Courier survey		Monitoring survey	
	(1)		(2)	
Time	0.018	(0.012)	0.002	(0.013)
Time^2	–0.001	(0.000)	–0.000	(0.000)
Time^3	0.000	(0.000)	0.000	(0.000)
Unemployment	0.008	(0.012)	–0.012*	(0.007)
Real GRP	–0.002	(0.001)	–0.000	(0.001)
Natural resources	–0.000	(0.006)	–0.007	(0.006)
Urbanization	–0.001	(0.017)	0.013	(0.011)
Inflation	–0.011	(0.012)	0.019	(0.017)
Retired	–0.034	(0.041)	–0.061	(0.054)
Poverty	–0.008	(0.010)	–0.016***	(0.004)
Elected	0.106***	(0.039)	0.004	(0.085)
External	0.013	(0.038)	0.001	(0.055)
First term	0.019	(0.061)	0.025	(0.052)
Experience	–0.001	(0.010)	0.004	(0.007)
Governor's age	–0.038*	(0.020)	–0.016	(0.014)
Governor's age^2	0.000*	(0.000)	0.000	(0.000)
Year=2008	–0.022	(0.016)	–0.006	(0.025)
Year=2011	–0.239	(0.145)	–0.056	(0.173)
Year=2012	–0.230	(0.158)	–0.023	(0.178)
R^2 (within)	0.65		0.56	
R^2 (between)	0.05		0.07	
R^2 (overall)	0.17		0.13	
F	52.19		31.74	
Observations	171		183	
Regions	47		63	

Note: The table reports fixed effects (FE) estimates. Standard errors clustered on Regions are in parentheses.
$^*p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

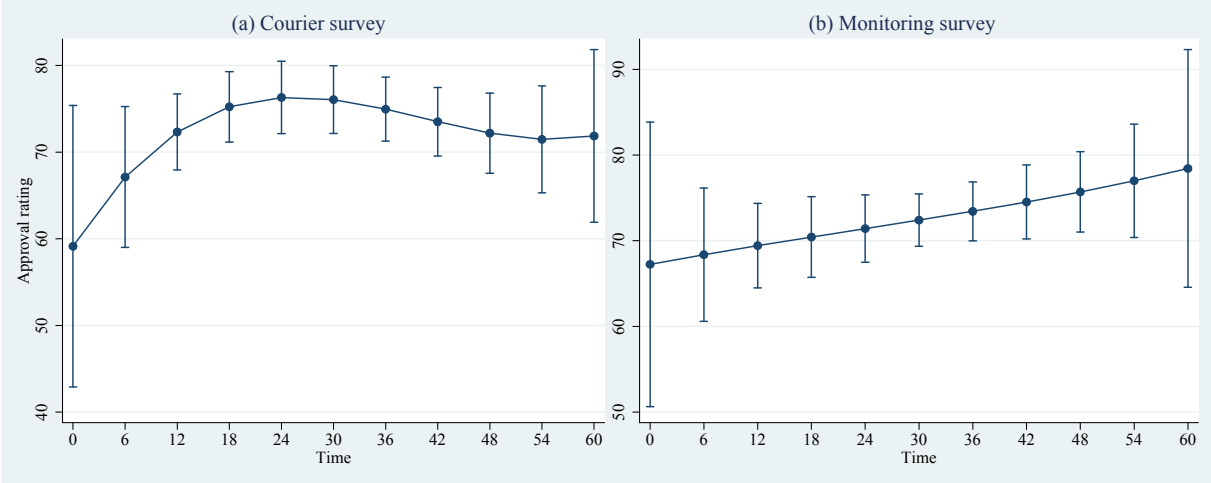

Figure 3: Effect of $Time$ on the president's approval ratings

We check two potential, and most straightforward, direct mechanisms of influencing electoral results: the mobilization of ruling party supporters and the manipulation of electoral results by electoral fraud.

4.1 Voter Mobilization

Our first idea is that governors may exert extra effort to mobilize groups of voters who are likely to be pro-government, such as public employees or employees of large private companies with established relationships with local political elites. Whether such an effort is fully legal (e.g. more active campaign targeting incumbent potential party supporters) or illegal (e.g. voter intimidation), it should result in a simultaneous increase in some measure of the effort and voter participation, similar to the observed increase in vote share.

To test whether governors additionally stimulate voter turnout when they are close to their term expiry dates, we estimate two models. First, we check whether regional voter turnout follows a trend similar to the trend in vote share found in the previous section. For this purpose, we estimate the following panel data model using a fixed effects estimator:

$$Turnout_{it} = \alpha_i + \alpha_t + \beta_1 Time_{it} + \beta_z Controls_{it} + u_{it}, \quad (3)$$

where $Turnout_{it}$ is the voter turnout in region i in elections in year $t \in \{2007,2008,2011,2012\}$. The rest of the elements are the same as in model (1).

Second, we use a measure of governors' mobilization effort based on the survey conducted by Levada Center immediately following the 2011 parliamentary elections.[21] The survey is based on face-to-face interviews with about 1,600 Russian respondents in 45 regions who represent the Russian urban and rural population over 18 years of age. The survey question we use asks whether respondents experienced any pressure to participate in the election and to cast their votes for a particular party or candidate. As our regional measure of governors' mobilization efforts, we take the share of respondents in a region who reported some pressure. We estimate the following cross-section model:

$$Effort_i = \alpha + \beta_1 Time_i + \beta_z Controls_i + u_i, \quad (4)$$

where $Effort_i$ is the share of respondents in region i who reported pressure to participate in elections and to vote for a specific party.

[21] The question we use for our analysis is available in the surveys after the 2011 elections only.

Table 4: The effect of Time on turnout (2007–2012) and mobilization efforts (2011)

	Turnout		Turnout		Mobilization	
	(1)		(2)		(3)	
Time	–0.285*	(0.161)	–0.356	(0.247)	–0.016*	(0.009)
Time^2	0.005**	(0.002)	0.008	(0.009)	0.001*	(0.000)
Time^3			–0.000	(0.000)	–0.000*	(0.000)
Temperature	0.131	(0.131)	0.135	(0.129)		
Temperature^2	0.002	(0.006)	0.002	(0.006)		
Unemployment	–0.221	(0.283)	–0.220	(0.284)	0.003	(0.009)
RGRP	0.029***	(0.007)	0.030***	(0.007)	–0.000	(0.000)
Natural resources	–0.052	(0.109)	–0.047	(0.110)	0.002	(0.001)
Urbanization	–0.438	(0.403)	–0.426	(0.401)	0.001	(0.001)
Inflation	–0.266	(0.305)	–0.253	(0.310)	0.022*	(0.012)
Retired	–1.497	(1.033)	–1.530	(1.038)	0.004	(0.006)
Poverty	–0.000	(0.152)	–0.004	(0.153)	–0.001	(0.004)
Elected	1.154	(1.753)	1.081	(1.779)		
External	0.126	(1.140)	0.145	(1.145)	0.057*	(0.031)
First term	0.140	(1.429)	0.109	(1.446)	–0.022	(0.042)
Experience	0.141	(0.146)	0.137	(0.148)	–0.003	(0.005)
Governor's age	0.312	(0.531)	0.323	(0.529)	0.023	(0.015)
Governor's age^2	–0.003	(0.005)	–0.003	(0.005)	–0.000	(0.000)
Married					–0.002	(0.017)
Employed					0.065***	(0.017)
Female					–0.028*	(0.017)
Higher education					0.013	(0.021)
Consumer status					0.009	(0.010)
Children					0.009	(0.019)
Year=2008	4.611***	(0.862)	4.603***	(0.858)		
Year=2011	–3.721	(3.448)	–3.714	(3.465)		
Year=2012	1.562	(3.455)	1.596	(3.478)		
R^2	0.50		0.50		0.03	
F	18.27		17.47		2.50	
Observations	310		310		1563	
Regions	80		80			

Note: The table reports fixed effects (FE) estimates (columns 1 and 2), and OLS estimates for column 3. Standard errors clustered on Regions (columns 1 and 2) and robust standard errors (column 3) are in parentheses.

$^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

The results of the fixed effects estimations of the model for turnout (model 3) are presented in Table 4, columns (1) and (2), and illustrated in Figure 4. Based on the estimations, we find some evidence of the relationship between $Time$ and voter turnout, although weak. On average, voter turnout is higher by about 2–4 percentage points in a region where the governor is about to finish his term of office compared to, e.g., a region where the governor is in the middle of his term.

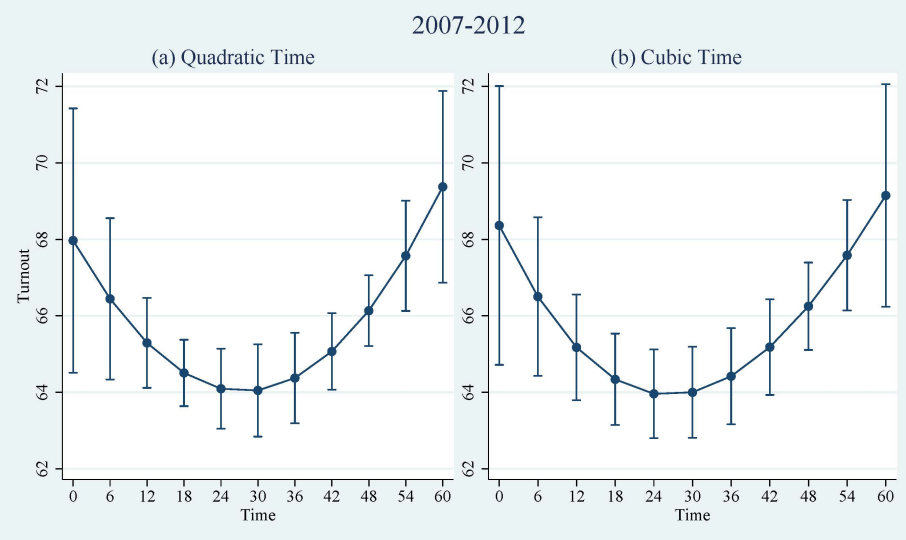

Figure 4: Effect of *Time* on turnout (2007–2012)

However, such an increase in turnout cannot explain all the increase in the vote share of the ruling party found in the previous section. Even if one assumes that all the additional voters cast their votes for the ruling party, then, given "normal" turnout of about 64% and "normal" ruling party vote share of 60%, additional 4 percentage points to turnout would result in only about 2 additional percentage points to the vote share of the ruling party, which is less than a quarter of the increase we find.

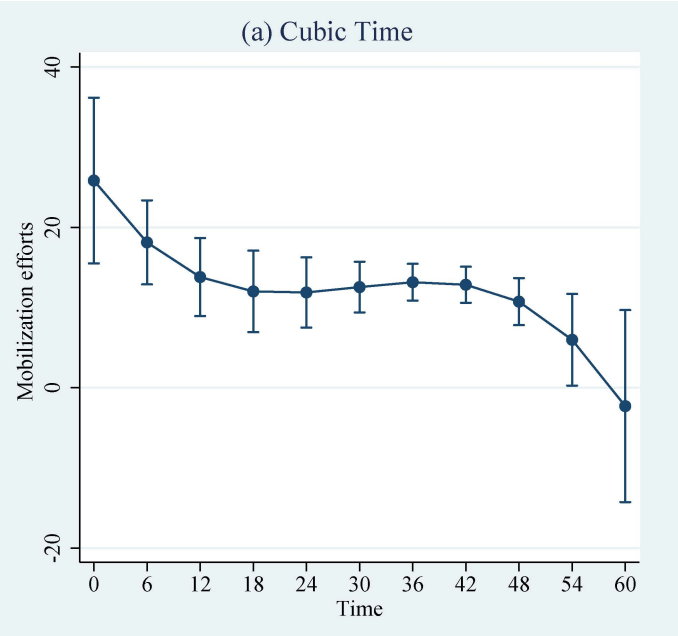

Figure 5: Effect of *Time* on mobilization efforts

We also find some evidence of the relationship between time and mobilization efforts (Table 4). Figure 5 illustrates that when a governor is left with less than 6 months in office, voters report pressure almost twice as often (about 25% of the respondents) as when a governor is left with 1–3 years (about 12%–15%).

Table 5: The effects of Time on the measures of fraud

	Fraud Moser		Fraud Koenig		Fraud Kobak		Invalid Ballots	
	(1)		(2)		(3)		(4)	
Time	0.090	(0.516)	0.707	(1.075)	0.013	(0.205)	0.031*	(0.015)
Time^2	0.004	(0.016)	–0.022	(0.035)	–0.003	(0.007)	–0.001**	(0.001)
Time^3	–0.000	(0.000)	0.000	(0.000)	0.000	(0.000)	0.000*	(0.000)
Turnout	1.585	(1.170)	1.257	(1.683)	–0.192	(0.567)		
Unemployment	0.003	(0.448)	0.429	(0.921)	0.348*	(0.194)	0.042***	(0.014)
RGRP	–0.018	(0.042)	–0.056	(0.057)	0.005	(0.022)	–0.001**	(0.001)
Natural resources	0.206	(0.173)	0.246	(0.393)	0.020	(0.108)	–0.008	(0.008)
Urbanization	0.754	(0.786)	0.704	(1.164)	0.156	(0.400)	–0.025	(0.020)
Inflation	0.671	(0.526)	0.180	(0.903)	0.032	(0.369)	–0.049**	(0.020)
Retired	–2.233	(2.396)	2.265	(4.039)	–0.151	(1.009)	0.042	(0.056)
Poverty	0.265	(0.232)	0.636*	(0.386)	–0.069	(0.087)	–0.001	(0.009)
Elected	3.718	(2.693)	0.962	(4.445)	0.444	(0.983)	–0.103	(0.077)
External	0.846	(1.593)	–0.949	(2.994)	0.898	(0.853)	–0.133**	(0.062)
First term	–3.279	(1.997)	3.180	(3.913)	–0.368	(0.792)	–0.071	(0.097)
Experience	–0.500*	(0.272)	0.563	(0.470)	–0.022	(0.128)	–0.029***	(0.010)
Governor's age	–2.364***	(0.755)	2.326	(1.835)	–0.200	(0.684)	–0.045	(0.029)
Governor's age^2	0.023***	(0.007)	–0.021	(0.016)	0.003	(0.007)	0.000	(0.000)
Year=2008	–6.722	(6.313)	–4.468	(8.988)	1.834	(3.185)	0.137**	(0.067)
Year=2011	15.087***	(5.853)	8.977	(9.074)	–1.324	(4.335)	0.087	(0.206)
Year=2012	5.390	(5.675)	–1.624	(7.818)	–0.247	(2.914)	–0.345*	(0.199)
R^2 (within)	0.61		0.16		.		0.36	
R^2 (between)	0.63		0.16		0.15		0.05	
R^2 (overall)	0.63		0.16		0.09		0.00	
F							13.51	
χ^2	3159.47		1404.33		11087.82			
Observations	311		311		311		311	
Regions	80		80		80		80	

Note: The table reports the specifications with endogenous variable Turnout instrumented with the average temperature in a region on election day and its square (columns 1, 2 and 3) and fixed effects (FE) estimates for cubic (column 4) specification. Robust standard errors (columns 1, 2 and 3) and standard errors clustered on Regions (column 4) are in parentheses.

$^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Unfortunately, despite a very notable increase in mobilization effort closer to the term expiry date, the survey nature of our measure of mobilization effort does not allow us to interpret this increase in terms of extra votes to the ruling party, and thus to draw any conclusion as to what extent it can explain the previously established increase in the votes.

4.2 Electoral Fraud

Our second idea is that governors may deliver extra votes through increased electoral manipulations. To test this explanation, we use various measures of regional-level fraud as the dependent variable, and estimate the following model (5) with a fixed effects estimator:

$$Fraud_{it} = \alpha_i + \alpha_t + \beta_1 Time_{it} + \beta_z Controls_{it} + u_{it}, \quad (5)$$

where $Fraud_{it}$ is a measure of electoral fraud in region i in national-level elections in year t. We use three fraud proxies. The first proxy is a popular forensic measure recently used, e.g., by Moser and White (2017) and Bader and van Ham (2015), which is based on the degree to which the precinct-level turnouts in a region deviate from the distribution they should follow when elections are clean (Klimek, Yegorov, Hanel, & Thurner, 2012; Myagkov et al., 2009). We construct our first measure of regional electoral fraud labeled $FraudMoser$ as a share of "potentially fraudulent" precincts in the region. A precinct is considered fraudulent if the turnout in it is greater than the national average turnout plus 1 standard deviation.

The second proxy is based on the conjecture that people, while manually correcting electoral results, tend to use more integer numbers than should be the case when elections are clean. Such measures are used by, e.g., Kalinin and Mebane (2012) and Kobak, Shpilkin, and Pshenichnikov (2016). We measure fraud as a share of precincts in which the ruling party's share is close to any integer percentage point +/–0.05 percentage points; that is, precincts with, e.g., reported ruling party vote share in the 49.95%–50.05% range are considered suspicious. We label this variable as $FraudKobak$.

The third fraud proxy we use is a measure developed by Koenig (2015) and designed to capture fraud techniques that inflate the correlation between a rigging candidate's vote share and turnout in precincts where fraud occurs, such as ballot stuffing. The idea behind the measure is that, while in the absence of fraud there should be no abnormally high correlation between

turnout and candidates' vote shares in a precinct, ballot stuffing increases both turnout and the rigging candidates' vote share, and hence the correlation between them. To construct this measure, we first regress ruling party vote share on turnout using OLS for each voting district ("TIK" – territorial electoral commission) where a unit of observation is a polling station ("UIK" – polling station electoral commission). If the coefficient on turnout is greater than 1, the district is labeled as fraudulent. The regional measure of fraud which we label as $FraudKoenig$ is then the share of votes for the ruling party coming from the "fraudulent" districts in all ruling party votes in the region.

Finally, we estimate the effect of $Time$ on the number of invalid ballots in a region. Although this number itself is of course not a measure of fraud, it allows us to capture another popular fraud technique when ballots for opposition candidates are being deliberately invalidated. If such a type of fraud takes place in a region, it should result in an increased number of invalid ballots in that region.

Indeed, in all cases the resulting numbers may not be sufficiently good proxies for actual fraud since they do not directly measure how much extra votes the manipulating candidate received due to fraudulent activities, but they are indeed highly correlated with them: the more fraud has occurred in elections, the higher values of the measures are likely to be. The presence of such a correlation is sufficient for the purposes of our analysis.

The results of the estimation of model (5) for distinct fraud measures designed to capture different electoral manipulation techniques, $FraudKobak$, $FraudMoser$, $FraudKoenig$, and $InvalidBallots$ are presented in Table 5, columns (1)–(4). The results suggest no evidence that the approaching end of a governor's term affects manipulations, which implies no evidence that regional governors in Russia additionally use a means of electoral fraud to affect the outcomes of the national-level elections and thus to signal their loyalty to the central authorities.

5. Concluding Remarks

In this paper, we highlight the incentive mechanism of regional governors in Russia to signal their loyalty to the president closer to the end of their terms through the results of ruling party national-level elections. In addition, we explore the mechanism's possible channels. Our findings strongly suggest the presence of signaling through better electoral results. However, the methods used to achieve better results are not entirely clear.

We establish that governors, when approaching the end of their terms and facing a re-appointment decision, deliver more votes to the ruling party in national-level elections in their regions, and this increase does not seem to be driven by an increase in actual ruling party popularity. Mobilization of ruling party supporters, likely in the form of illegal pressure on voters, seems to be used to deliver these extra votes, but probably not exclusively: we argue that voter mobilization is unlikely to fully explain the additional votes for the ruling party. We further find no convincing evidence that electoral fraud can explain the rest of the votes.

Overall, our findings suggest that even if governors directly affect the results of the ruling party in national-level elections by the stimulation of turnout among ruling party supporters, such a direct influence can unlikely be the only reason for the additional vote the ruling party tends to receive in regions where governors approach their term end. This leaves us with the conjecture that governors manipulate electoral results with other techniques than those that affect voter turnout and that can be captured by our measures of fraud, such as harassing opposition supporters, restricting the access of opposition candidates and supporters to the media, or manipulating the final numbers in a relatively sophisticated manner. However, the data that we managed to obtain so far do not allow us to test these potential alternative explanations.

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Appendix

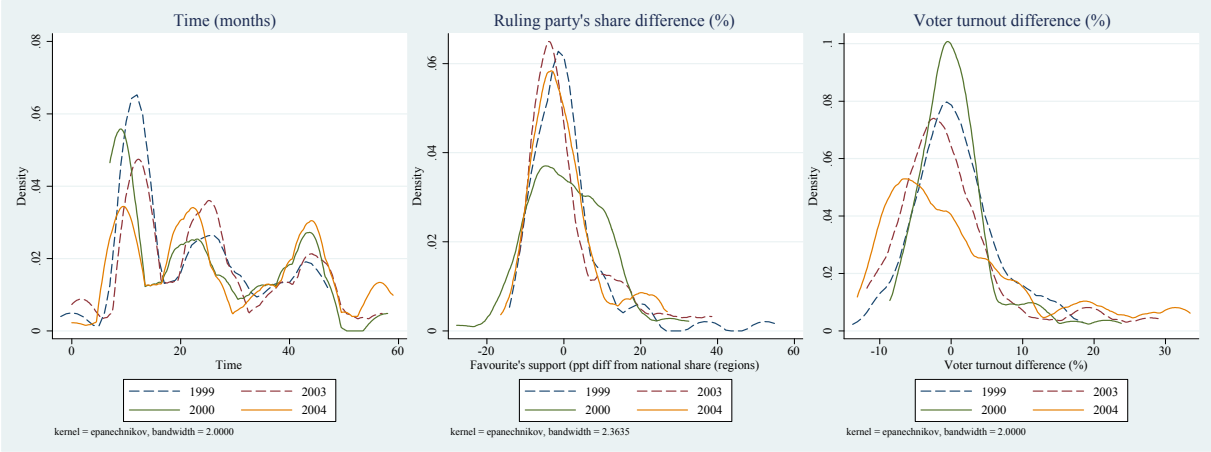

Figure 6: Kernel densities of electoral statistics by elections (1999–2004)

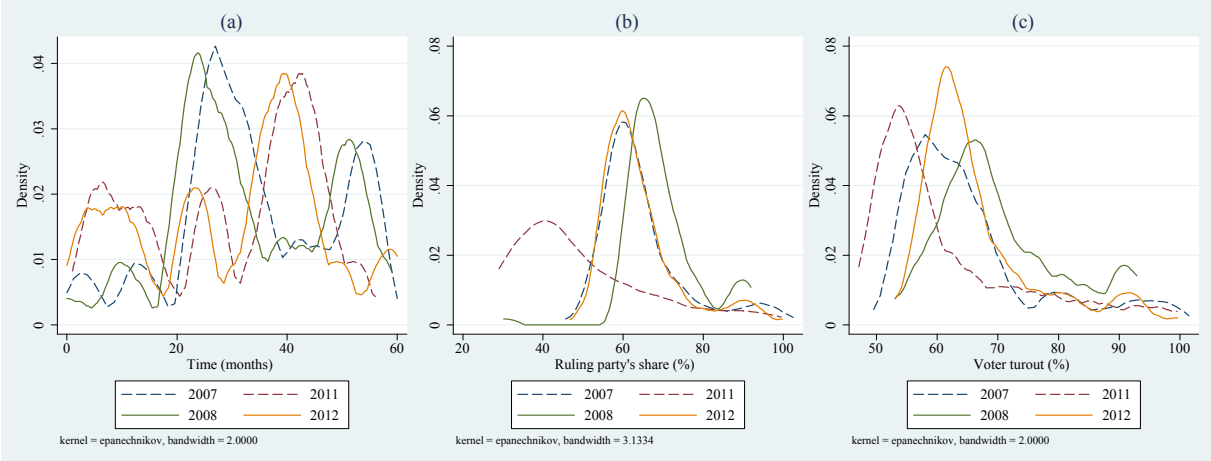

Figure 7: Kernel densities of electoral statistics by elections (2007–2012)

Table 6: Summary statistics: Dependent variables

	Obs	Min	Max	Median	Mean	St. Dev.
1999–2004						
Ruling party share (%)	307	24.84	96.49	46.73	49.527	16.40
Turnout (%)	307	43.85	97.71	62.39	63.001	8.792
2007–2012						
Ruling party share (%)	311	29.02	96.11	62.02	61.071	13.22
Turnout (%)	311	47.10	98.38	63.53	65.230	10.67
Fraud Moser	311	0.432	99.72	9.024	19.289	23.06
Fraud Kobak	311	5.517	40.39	11.54	12.996	5.456
Fraud Koenig	311	0	100	18.73	27.097	24.75

Table 7: Summary statistics: Independent variables

	Obs	Min	Max	Median	Mean	St. Dev.
1999–2004						
Unemployment: unemployment rate (%)	307	1.300	32	11.10	11.786	4.807
RGRP: real gross regional product per capita (trillions of 2005 rubles)	307	16.07	791.8	55.90	82.913	105.1
Natural resources: share of natural resources in GRP (%)	307	0	81.94	1.377	8.447	15.95
Urbanization: urbanization rate (%)	307	25.40	100	69.20	70.079	12.52
Inflation: consumer price index (year to year)	307	7.800	67.20	24	25.970	14.17
Retired: # of retired people per 1000 of population	307	12.66	34.57	26.39	26.122	3.694
Poverty: # of people living in poverty per 1000 of population	307	8	77.50	31.10	33.064	12.91
External: dummy governor coming from another region	307	0	1	0	0.036	0.186
First term: dummy for governor serving his first term	307	0	1	0	0.430	0.496
Experience: governor's cumulative in-office experience (full years)	307	0	14	5	5.713	3.495
Governor's age (full years)	307	35	73	54	54.075	8.026
Temperature: election day average temperature (degrees Celsius)	307	–27.95	11	–3.300	–5.222	7.831
2007–2012						
Unemployment: unemployment rate (%)	311	0.800	18.10	6.600	6.890	2.879
RGRP: real gross regional product per capita (in 2005 prices)	311	46.71	2386.8	114.8	190.166	288.9
Natural resources: share of natural resources in GRP (%)	311	0	73.90	1.900	10.168	16.38
Urbanization: urbanization rate (%)	311	26.20	100	70.20	70.399	12.22
Inflation: consumer price index (year to year)	311	3.100	16.50	8.300	9.120	3.410
Retired: # of retired people per 1000 of population	311	18.55	36.50	27.98	28.147	3.252
Poverty: # of people living in poverty per 1000 of population	311	5.700	45.30	15.70	16.391	5.830
Elected: dummy for governor being directly elected	311	0	1	0	0.077	0.267
External: dummy governor coming from another region	311	0	1	0	0.235	0.425
First term: dummy for governor serving his first term	311	0	1	0	0.476	0.500
Experience: governor's cumulative in-office experience (full years)	311	0	21	5	6.653	5.355
Governor's age (full years)	311	35	74	55	54.248	8.065
Temperature: election day average temperature (degrees Celsius)	311	–34.97	11	–5	–6.183	7.603

Table 8: Summary statistics: Levada survey variables

	Obs	Min	Max	Median	Mean	St. Dev.
Employer's pressure: dummy for reporting some pressure	1563	0	1	0	0.122	0.328
Married	1563	0	1	1	0.583	0.493
Employed	1563	0	1	1	0.550	0.498
Female	1563	0	1	1	0.551	0.498
Higher education: dummy for having a university degree	1563	0	1	0	0.223	0.416
Prosperity: Likert scale individual's prosperity	1563	1	6	3	2.945	0.832
Children: dummy for having children	1563	0	1	0	0.338	0.473